

refers to in his letter in NATURE, vol. xviii. p. 329, are of not unfrequent occurrence on the west coast of India, in the plains as well as the highlands. Moreover I can recollect being much struck with the appearance whilst travelling in Ireland in the autumn of 1863. The convergence of rays in the east, while the sun was setting, was then new and singular to me, but I have since often observed the phenomenon.

On some occasions the atmosphere has seemed clear, until sunset, when the blue sky has literally reddened, and it is then that the cloud shadows show best as bands of blue stretching from west to east, and visible in the zenith as well as nearer their converging points.

E. H. PRINGLE

Cleveland, July 27

#### Taunton College School

IN your last number, in an article by Mr. Shenstone, of Exeter School, on the formation of a laboratory, he incidentally speaks of the council of this school, of which I am headmaster, as having "quenched the torch of science in the west." As this statement may be prejudicial to me, and can only arise from Mr. Shenstone's being imperfectly acquainted with the facts, I trust to your spirit of fairness to allow me to state publicly (1) that the senior half of the school in the last six months has been through a course of electricity and magnetism illustrated by experiments, and has just passed a creditable examination in those subjects under a Cambridge examiner of high reputation; (2) that there has been a course of lectures on botany this term; (3) that all those boys whose interests require it have been taught chemistry; (4) that we have had a very favourable report of the boys' proficiency in mathematics, which I presume, has some claim to be considered science, though to my great surprise at the present day it is often spoken of as if it had none. The council have left me perfectly free to teach as much or as little science as I choose; I choose, and in all probability always shall choose, to give every opportunity of acquiring scientific knowledge to my pupils, consistent with their instruction in other necessary subjects, and if I find any with strong scientific tastes, to foster them to the utmost. As my academical position was mainly, though not entirely, due to my scientific knowledge, it would be strange if I acted otherwise.

HENRY PEARCE KNAPTON

Taunton College School, July 27

#### Deep-sea Dredgings off the Gulf of Mexico

I WISH to correct an omission of mine in a notice of the work of the United States schooner *Blake* (NATURE, vol. xviii. p. 198). Capt. Sigsbee's modification of Thomson's wire-sounding machine was used for the deep-sea soundings. The steel wire was No. 20 American gauge, and the time required to reel in with it was always one minute per 100 fathoms. The steel wire rope used for dredging, which was made expressly at the suggestion of Prof. A. Agassiz, was the one mentioned in the notice as being of galvanised steel, with a hemp core (not coil, as printed), and which in the notice appears as if it were the same wire rope that was employed for sounding. The sentence will read correctly if the words "used for dredging" be inserted after the words "the wire rope" in the paragraph. The importance of this suggestion of Prof. Agassiz will be best understood when the immense saving of space gained—one coil of 3,000 fathoms of this wire rope occupying on the reel only a space of 5 feet long, 5 feet high, and 4 wide—and the immense saving in time of lowering and hoisting the dredge, are taken into account.

E. P. W.

#### ANTHROPOLOGY IN FRANCE<sup>1</sup>

IN the numbers of the *Bulletins* of the French Anthropological Society for 1876 are many papers of importance, some of which we shall briefly bring before our readers.

An admirable series of photographs of natives of New Caledonia, taken by order of the local French authorities, has been made the subject of some interesting notices by M. Paul Topinard. Comparing these pictures and a number of the skulls of indigenous New Caledonians with those of native Australians, he finds that while the former

exhibit a greater unity of type than the latter, they also differ from them in presenting a roundness in the contour of the face, due to a predominance of the cellular tissue, which contrasts strongly with the well-marked muscles of the Australian. Their affinity with the negro and New Guinea Papuan types is incontestable. M. P. Topinard discusses in another paper the relative merits of the craniometric and facial modes of measurement, adopted the one by Daubenton and Camper, the other by Blumenbach, and Prichard, and the results obtained by M. de Quatrefages with the instrument invented by him, and named *goniometre pariétal*. The speaker considers Prichard in error when he attempts to include all Mongolian groups generally under his so-called "ogival" cranial form, this form belonging, in fact only to the Esquimaux.—M. Lagneau wishes to draw the attention of anthropologists to the peculiarities still observable in the people of some parts of La Gironde, known as "Gavaches," or "Marotins," who are descended from certain Angevins, called into the district in about 1525, to repair the ravages caused by a virulent epidemic. In their indolence and slowness they differ strikingly from the vivacious Gascons, among whom they live.—The discovery in the lacustrine houses of Switzerland and Savoy, and in the Lake of Bourget of bronze rods, surmounted with movable rings, has called forth explanations from all quarters. Carl Vogt, among others, has come forward in response to M. Mortillet's invitation to supply him with a clue to their use, and according to him we still have a similar instrument in the "Ringelstock" of the German herdsman, which is formed of a stout nut-stick, terminating in a lateral branch, on which are hung several metal rings. If the noise is not successful in bringing back the animal, the instrument is thrown at its head with an alarming clatter of bells. M. Hamy entertained the members of the society with an account of the eccentricities of Siamese and Chinese fashion in the development of the fingernails, which, according to some of the fac-similes laid before the meeting, at times attain a length of forty, and even forty-five centimetres, although usually only that of ten or twelve centimetres; in most instances this process of lengthening carries with it a corresponding twisting and interlacing of the nails, which acquire the semblance of antlered horns.—M. Bertillon has for some time been engaged in a careful analysis of the preponderance of one sex over the other in first or second legitimate, and illegitimate births in France, and some other countries, more especially Austria. He finds that in France to every 100 females born alive, there are 105 males; while in regard to still-born births the excess is as 137 to 100. These relations are, however, found to differ essentially when illegitimate births are considered alone, in which case the proportion is as 1,031 males to 1,000 females. In Austria, where the official reports kept of the sex of first and second births admit of more precise calculations in regard to this point, it is found that first births are more frequently masculine, in the proportion of 110.3 to 100; second births being as 105.2 males to 100 females, while the general relation of the sexes for all births is as 106 males to 100 females. This, however, applies only to legitimate births; the proportion falling in the illegitimate to 105 males against 100 females. MM. Lagneau, Broca, and others, took part in the discussion which followed on the reading of M. Bertillon's paper on the Influences of Primogeniture on Sex. In relation to this subject we may refer to M. Sanson's report (laid before the society on May 4, 1876) of the influence of age, vigour, &c., on the offspring, as noted by himself, on sheep and other domesticated animals.—French local archæology and palæontology have received careful attention from the society during the past year. M. Pommerol has described the curious megalithic monuments which are to be found in close vicinity to the mineral springs, ancient mortuaries, and church at Saint-Nectaire, in Auvergne. A dolmen, hitherto known only to the local peasantry

<sup>1</sup> *Bulletins de la Société d'Anthropologie de Paris*. Tome onzième, 1876.

has been cleared from the superincumbent foliage and opened, revealing remains of skeletons which appear to belong to the polished stone-age. M. Lepic has discovered a series of bone-caves near Soyons on the Rhone, and known as La Caverne de Néron. Here human remains are found intermingled with rhinoceros, elephant, horse, and reindeer bones, an immense number of flints, hatchets, arrow-heads, &c. M. Lepic, in extending his explorations to the plain of Soyons, above these caverns, discovered unmistakable remains of human habitations, together with the ordinary kind of bone, silex, and other *débris*. In the latter, however, was found a large hatchet formed of hematite, the first of the kind met with; fragments only of the stone having been hitherto obtained. In the grotto of Savigny stag-horn tools have been found precisely similar to those in use among the Lapps and Esquimaux for smoothing down the rough seams of their skin garments. At the aqueduct at Nîmes a Celtic inscription in Greek characters has been brought to light, this being the third of the kind found in Southern Gaul. The Abbé Maillard has made a careful survey, and drawn up a comprehensive plan of the so-called prehistoric stations at Thorigne-en-Charnie. M. de Prunières has laid before the society the results of his examination of the dolmens of l'Aumède Flozère, in which he had found an enormous mass of human bones belonging, for the most part, to a dolichocephalic race. The great number of the cranial bones, which presented perforations and cicatrised margins, confirms the view that trepanning was resorted to by primitive men for various pathological conditions.—M. Fischer's paper on cave-conchology and his reference to the identification of Isle of Wight fossils at Langerie-Basse, led to an interesting discussion on the question whether navigation could date as far back as the age of bone caverns, or whether different geographical relations alone could explain the presence of shells far from their centres of origin.—M. Boyer has made the skulls found in the Puy-de-Dôme caves the subject of careful study, and shows that a greater variety of type is to be met with than is usually admitted, while M. A. Roujon has turned his attention to the general anthropology of the district, which has led him to the assumption that five distinct types have succeeded one another in France.—M. Mortillet has presented the society with a copy of a map of prehistoric France, drawn up by him for M. Elisée Reclus' "Géographie Universelle," in which he has noted down all stations, caves, and dolmens discovered up to the present time.—M. Piette has drawn up a report of the remains in France of a Gallic civilisation, as exemplified in the collections brought together in the exhibition held at Rheims in 1876. One of the most important of the papers included in the *Bulletins* under consideration is M. Lagneau's exhaustive review of the ethnic distinctions between Celts and Gauls, a question which necessitates a careful reference to classical authorities, and seems still far removed from any satisfactory determination.—Another question similarly open to discussion, although widely different in character, is considered by M. Topinard, who has made the publication of his manual of anthropology the occasion for discussing the differences of meaning, to be practically attached to the terms ethnology, anthropology, and ethnography. A summary of such a paper would be of little use, and from the minutely-detailed series of definitions which the writer has thought it necessary to give, it would appear that Frenchmen have been less ready than ourselves to accept the more special meaning of anthropology as applied to man zoologically, and distinct from man when considered in reference to characteristics of race.

#### OUR ASTRONOMICAL COLUMN

THE TOTAL SOLAR ECLIPSE OF MAY 28, 1900.—In a recent note upon solar eclipses that will be total upon the North American continent, reference was omitted to one

in the last year of the present century. On May 28, 1900, the moon's shadow will traverse the southern part of the United States territory, entering it near New Orleans and passing off in Chesapeake Bay. The elements of this eclipse are as follow:—

G.M.T. of Conjunction in R.A., May 28, 1900, at 2h. 56m. 22s.

R.A.	...	...	...	...	...	64° 56' 48".5
Moon's hourly motion in R.A.	...	...	...	...	...	37 16.9
Sun's	...	...	...	...	...	2 32.4
Moon's declination	...	...	...	...	...	21 50 17.1 N.
Sun's	...	...	...	...	...	21 27 15.3 N.
Moon's hourly motion in declination	...	...	...	...	...	2 38.5 N.
Sun's	...	...	...	...	...	0 24.2 N.
Moon's horizontal parallax	...	...	...	...	...	58 26.6
Sun's	...	...	...	...	...	8.8
Moon's true semi-diameter	...	...	...	...	...	15 55.6
Sun's	...	...	...	...	...	15 47.0

The central eclipse begins in 116° 34' west of Greenwich, latitude 18° 0' N.; it occurs at apparent noon in 44° 50' W. and 44° 57' N., and ends in 31° 45' E. and 25° 21' N. Other points upon the line of central eclipse in American longitudes are:—

Long.	96° 15' W.	Lat.	27° 9' N.	Long.	76° 4' W.	Lat.	36° 45' N.
"	90 9	"	30 7	"	70 29	"	39 1
"	86 28	"	31 57	"	58 23	"	42 47
"	79 17	"	35 20				

At New Orleans the eclipse will be total for about twenty-five seconds, commencing at 7h. 29m. 23s. A.M.; local mean time with the sun at an altitude of 30°, and at the point 76° 4' W. and 36° 45' N., totality will begin at 8h. 47m. 27s. A.M., and continue 1m. 39s., which is about the longest duration of the total eclipse in United States territory, and indeed the longest available for observation upon land, on this occasion. After traversing the Atlantic the moon's shadow enters Portugal near Ovar, where totality lasts 1m. 30s., and passes off Spain about ten miles south of Alicante. In Alicante the total phase will commence at 4h. 10m. 11s. P.M., local mean time, ending at 4h. 11m. 29s. At Greenwich a partial eclipse is visible, magnitude 0.68, at 3h. 54m. P.M.

COMETARY NOTES.—Tempel's comet was detected at the observatory of Arcetri, Florence, on July 19, and as stated last week by Prof. Winnecke at Strasburg on the following evening. From the Strasburg observation it appears that the comet will arrive at perihelion September 7.1646 G.M.T. It has also been observed in this country with the aid of the ephemeris, given in this column.

Of the supposed comet reported to have been discovered by Mr. Lewis Swift on July 7, we have no further intelligence.

In a communication to the Royal Astronomical Society, Mr. Tebbutt, of Windsor, New South Wales, puts upon record the circumstance of his having first determined the orbit of the great comet of 1861, in addition to having been its first discoverer (on the night of May 13). Mr. Tebbutt's name was not associated with this grand object in Europe, in the same manner that the great comet of 1858 had been associated with the name of Donati, for the simple reason that there being no telegraph from Australia in that year, the news of his discovery did not reach Europe till the comet had so far diminished in brightness as to be of interest only to the astronomer. Otherwise a message by cable that a large comet discovered by Mr. Tebbutt might be looked for above the European horizon at the end of June, would doubtless have led to "Tebbutt's comet" being as universally known as was "Donati's comet" three years earlier. The period of revolution of Tebbutt's comet is just under 400 years, while that of Donati's is little short of 2,000.

Encke's comet will just be coming into view at the